

Controlling Science

by Don Fitz

Did you ever think that investigation of the potential dangers of putting GMOs (genetically modified organisms) into food would be based on objective research? Did you think that unbiased reviews of research by academic journals would chart a steady march toward Scientific Truth? If so, you would be very wrong. Through all of its phases, scientific research is subject to repression, manipulation and more insidious forms of control which push it toward a profit-based consensus.

Suppression of GMO research

Three sets of GMO studies form a pattern of authors' being harassed, intimidated and even having their findings "retracted," or withdrawn by a scientific journal after being published.

Arpad Pusztai was a world authority in the important field of plant lectins at the Rowett Research Institute in Aberdeen, Scotland. (Plant lectins are proteins that bind to sugar molecules.) Beginning in 1995, Pusztai investigated a GM potato whose developers thought that it might be toxic to insects, nematodes and fungi without harming mammals. To his surprise Pusztai found that rats who ate the GM potato had damage to their immune and digestive systems.

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Alarmed that his findings could indicate dangers to humans, he tried to warn the Ministry of Agriculture. They did nothing. As his worries mounted Pusztai obtained permission from the head of the Institute to broadcast his findings. They appeared on World Action Television in 1998. After intense corporate and political pressure, Pusztai was forcibly retired and denied access to his data. An enormous furor followed — Pusztai was exonerated but not rehired and his "findings were published in the medical journal, *Lancet*." [1]

A few years later, the hammer fell on Ignacio Chapela at the University of California, Berkeley. Along with his graduate student David Quist, Chapela demonstrated that GMO contamination was threatening the genetic diversity of Mexican maize. As Andy Rowell wrote:

Quist and Chapela reached two conclusions. The first was that GM contamination had occurred in Mexican maize and the second was that the GM DNA seemed to be randomly fragmented in the genome of the maize. If the first point was contentious, the second was explosive, as it suggested that transgenic DNA was not stable. [2]

When their findings were published in *Nature*, the biotech industry and scientific establishment went to extraordinary lengths to discredit them. *Nature*

danced around whether it would or would not retract the publication, though the findings were finally accepted. The University of California attempted to deny tenure to Chapela; but after a loud campaign, he received tenure in 2006.

Blatant suppression of GMO research has occurred most recently with Gilles-Eric Séralini who found that feeding Monsanto's GM corn to rats increased their development of tumors. The study appeared in *Food and Chemical Toxicology*, the same journal that routinely carries studies by Monsanto employees showing that GM corn is safe. The Séralini study was actually superior to that by Monsanto's research teams. First, Monsanto studies examine the effect of glyphosate (the active ingredient in Roundup) while Séralini examined rats fed Roundup itself. This is a critical distinction, since glyphosate could have synergistic effects when combined with other chemicals in Roundup. [3]

Second, Monsanto rats were only studied for 90 days while Séralini examined rats for two years. There were several other differences between the lines of research, but none of them threatened the validity of Séralini's findings. [4] Nevertheless, corporate researchers demeaned and hurled insults at Séralini, demanding that the journal withdraw his study.

As *Food and Chemical Toxicology* gave into corporate pressure and retracted the Séralini article, it admitted that the study was neither fraudulent nor did it intentionally misrepresent the data. Its retraction was based on the claim that "the results presented (while not incorrect) are inconclusive..." [3]

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This is an astounding statement since virtually every published research article has a "discussion" section wherein authors describe limitations of their findings and explain how further research could help clarify issues. If "inconclusive" results were the basis for retraction, then 99 – 100% of published research should be withdrawn.

This is in stark contrast to the open arms with which journals greet papers by corporate researchers. As Jill Richardson concludes in her review of the Séralini affair, “any time a study has at least one author with a professional tie to the biotech industry, you don’t even have to read the study to know the conclusion. It’s concluded that GE crops are A-okay.” [3]

GMO science not alone

While pure food advocates are justifiably outraged at the dismissal of serious investigations, please be aware that GMO research is not at all unique in being attacked. In September 1962, Rachel Carson’s *Silent Spring* exposed the havoc that

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pesticides had been wreaking on flora and fauna. I was in my early teen years at the time and remember well the personal ridicule heaped on her by chemical apologists.

Carson was hardly the only critic of pesticides to be dogged by industry. In 1997 Tyrone Hayes investigated how the herbicide atrazine feminizes male frogs by disrupting their endocrine system. He described how low income people of color are exposed via farm work or urban ghettos. When the US EPA did literature reviews of atrazine toxicity in 2007 and 2012 it ignored Hayes’ findings. [5] Sygenta, the Swiss manufacturer of atrazine, pursued Hayes so relentlessly that *The New Yorker* wrote that it “plotted ways to discredit him.” [6] Sygenta’s campaign included press releases, letters to the editor, a formal ethics complaint filed at University of California, Berkeley, attempting to get journals to retract his work, and investigating his private life.

Efforts to have scientific journals retract published articles detrimental to industry is not limited to pesticide and GMO research. It now includes investigations of climate change denial.

In February 2013, Stephen Lewandowsky headed a team of investigators who found that those who reject climate science more often believe in conspiracy theories. Soon after *Frontiers in Psychology* published the research, it was beset by climate denial fanatics. As threats of litigation mounted, on March 21, 2014, *Frontiers* retracted the Lewandowsky article, not because of methodological issues, but to avoid legal threats. [7]

The mother of research vilification is that on nuclear meltdowns. Though discounting the effects of Three Mile Island and Fukushima has been a favorite pastime of the nuke industry, it is Chernobyl where the results have been most clear and the findings most systematically ignored.

What is taken as the gospel truth regarding deaths resulting from the April 1986 Chernobyl meltdown is the *Chernobyl Forum Report* published by the World Health Organization (WHO) in 2006. [8] It estimated 4000 deaths. In 2009, a much more thorough analysis by Yablokov and others estimated the number of Chernobyl-caused deaths at 985,000. [9]

Immediately, the nuclear industry began hounding the Yablokov analysis, claiming that it “obfuscated” the truth, its references were from sources “hitherto unknown,” and “it was in a range of rather science fiction than science.” [10, 11] So vituperative and continuous were the attacks that WHO will still not recognize the corrected figures and some climate change activists have sided with the nuke industry from a misguided belief that radiation is less dangerous than coal plants. Countering the accusation that the manuscript had not been peer reviewed, senior author Yablokov noted that “The original Russian edition had two of the highest quality peer reviewers: Prof. Dmitry Grodzinsky (Head of Ukrainian State Radioprotection Committee) and Prof. Helen Burlakova (Chair of the Russian Radiobiological Society).” [12]

Katz points out the absurdity of the claim that the Yablokov study does not cite peer-reviewed research [13]. The WHO figure of 4000 deaths is based on 11 studies, only 2 of which are peer reviewed. The Yablokov analysis cite 112 studies, 46 of which are peer reviewed. Those disparaging the Yablokov study dismiss reports from groups such as Greenpeace as scientifically worthless while accepting reports from the nuclear industry at face value.

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Of course, the biggest difference in the two studies is the vastly greater number of deaths estimated by Yablokov. There are at least three reasons for the discrepancy.

1. The WHO report limits its estimation of deaths to 3 groups within 3 countries with a total population of 605,000. Yablokov’s estimates include radiation effects on the entire globe (7 billion), especially countries near, but outside of the USSR, where 57% of the fallout was deposited.
2. The WHO report focused on current radiation exposure. It ignored or minimized (a) future exposure and (b) massive radiation received at the time of the meltdown.
3. The WHO report focused on a narrow range of cancers and birth defects. In contrast, Yablokov’s conclusion was that ...

... in ... countries contaminated to varying degrees by radionuclides from Chernobyl, there has been a significant increase in all types of cancer; in dis-

eases of the respiratory, cardiovascular, gastrointestinal, urogenital, endocrine, immune, lymphoid, and nervous systems; prenatal, perinatal, infant and child mortality; spontaneous abortion, deformities and genetic anomalies; disturbance and retardation of mental development; neuropsychological illness, and blindness. [13]

For those who claim to pursue scientific truth to ignore effects of this magnitude and ridicule authors who document it confirms that treatment of GMO research is neither new nor distinct. Harassment of researchers and suppression of findings which contradict powerful economic interests permeates science. Corporations have enormous influence over what appears on the news and what gets swept under the rug.

Carrots over sticks

Reacting to research after it is published could be called *rear-end repression*. It is nasty and messy and educational institutions hate being involved in it because it pulls the fig leaf off of their facade of objectivity. *Front-end domination* is much more prevalent — it refers to the way government and industry guide research in their preferred direction.

Kris Hundley describes a crystal clear example in “Koch Brothers Buy Economics Department.” A foundation bankrolled by Charles G.

Koch put up \$1.5 million for positions in Florida State University’s Department of Economics.

In return, his representatives get to screen and sign off on any hires for a new program promoting “political economy and free enterprise...” The contract specifies that an advisory committee appointed by Koch decides which candidates should be considered. [14]

Is this basically an obscene version of standard operating procedure at Any University, USA? Is it any different from Peabody funding clean coal studies at Washington University in St. Louis (where Barry Commoner once headed the Center for the Biology of Natural Systems)? Or, is it different from an agricultural school focusing on fertilizers, pesticides, herbicides and fungicides?

During the 25 years I worked at St. Louis Psychiatric Rehabilitation Center, I often collaborated with faculty at the Missouri Institute of Mental Health, which was a branch of the University of Missouri medical school. It appeared that the Institute had the practice of hiring and retaining faculty who could bring in grant money. Faculty were free to attract money in any way that they could, but the drug companies provided the most and largest grants. So, while everyone had academic freedom to investigate whatever they wanted, those who researched drug benefits were more free than others.

The Land Institute’s David van Tassel computed figures that explain the regard that the US government has for organic farming. Food, which many feel is the most basic human need, gets a total funding of \$1.12 billion, 1/27 of the \$29.9 billion which goes to medical research. Organic and sustainable food production receives a total of \$43 million, or 1/695 of that going to medical research. [15]

While funding is critical in shaping basic research, so is the way that articles are “peer reviewed” before being published in scientific journals. In order to become a peer who is invited to review articles, a person must previously publish articles in that area. Conversely, a person who repeatedly publishes articles in a journal will be invited to review articles for it. This means that biotech researchers who publish articles discounting GMO dangers and nuke researchers who publish articles showing the safety of nukes will soon be the ones making judgment calls on what new articles are fit for publication. As more and more industry researchers publish their material, expect journals to move in the direction of accepting fewer critical findings.

Charles Seife details how drug companies have become particularly adept at maximizing the likelihood that scientific research will find what they want. [16]

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1. Corporate ghost writers can produce an entire article for a researcher (who may or may not have been the one who actually did the research and who may or may not acknowledge the role of the true author).
2. Companies pay thousands of dollars to academics who give lectures favorable to drugs.
3. Money talks to the mind: Researchers who have received more money from a drug company perceive that its drugs are safer than do researchers without those financial ties.
4. Requirements that researchers report financial conflicts of interest when publishing articles tend not to work because [a] there are no consequences for failing to report conflicts and [b] backup systems to ensure reporting don’t work.

5. The same problems regarding not reporting conflicts of interest occur when applying for grants.

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6. Management at the National Institute of Health (NIH), which gives tens of billions in grants, discourages investigating conflicts of interest.
7. NIH advisory committee members receive large sums of money from drug companies for speaking and consulting.

8. NIH waivers for conflicts of interest are supposed to be exceptional, but are passed out like candy on Halloween.

In other words, the problem is **not** with a rogue drug company or researcher here and there, but with the entire system — granting institutions, research labs, journals, and professional societies. There is an interconnected whole which ensures that profit talks.

Who determines the goals of science and technology?

If we limit our framework to the way that corporations buy off some researchers and punish thought criminals, then we might approach science as if it is an Eternal Truth waiting to be discovered by those whose hearts are so pure as to be untainted by money. The problem is that this view fails to recognize that technological changes are not inevitable because they are not separate from the society that gives birth to them.

Before a technology can spread throughout society, its advocates must vigorously lobby for and build an infrastructure and arrange for “bribes, pork-barrel legislation and regulatory exemptions.” [17] Every new technology that “takes hold” is first created within a society that defines its investigation as valuable science.

One of the main reasons for pursuing a particular technology at a particular time in history is that it can be useful for the few who dominate the many. Larry Lohmann and Nicholas Hildyard give the example of the molding machine adopted at the Chicago McCormick manufacturing plant during the mid-1880s. One might think that management would bring in new machines to “modernize” the plant and make it more efficient. This was not the case. The “new machines produced inferior castings at a higher cost than the machines they replaced...” [17]

In the 19th century, why would anyone install more expensive equipment that produced a lower quality product? Because McCormick was slugging it out with the National Union of Iron Molders and the new machines could be run by unskilled workers who replaced union members.

In the 20th century, why did the mental health industry begin encouraging the use of drugs for problems like depression and obsessive-compulsion when there were already cognitive-behavioral treatments that work quite well without creating the risk of brain damage? Because corporate medicine/pharmacy was in a frenzy to centralize mental health care under the control of psychiatrists who would use the most expensive treatment.

In the 21st century, why is Big Food obsessed with spreading GMO technology when nobody who eats food is asking for it and it is fraught with environmental and health dangers? Because GMOs are a

core part of a grand plan to replace small farmers with mega-farms which produce uniform products for the global market and ignore needs to feed the local population.

By beginning with the overall goal of the food industry, a clearer picture of the suppression of research on GMO dangers emerges. Corporate ag defines the problem as how to increase its control of food production. GMOs rely on chemical inputs that raise the cost of production and thereby destroy small farms. Good research is then defined as investigations which help accomplish these goals, including demonstrating that GMO/chemicalized agriculture is efficient and safe. Suppression of findings which demonstrates the dangers of these crops is a last resort to be used only when the opposition is getting too large. Taking this into account, attacks on scientists such as Pusztai, Chapela and Séralini are validations of the strength of the resistance movements.

Defending the right of scientists to investigate dangers of GMO food

could not be successful if that defense were limited to demanding free scientific inquiry while ignoring the way that agro dollars control the world’s food. The food industry will use any technique it can to squash significant opposition. That includes softening their blows against critics until the heat dies down and then beginning the attack anew. The right to scientific investigation can only be protected if it is part of a larger effort to challenge the right of corporations to define what good food is and how it should be grown. The fact that the food sovereignty movement fully understands the unity of these goals is why it is so strong and why Big Food fears it so much.

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